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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/775,542	02/10/2004	Donald A. Seccombe JR.	BTU-099XX	6694
207	7590	02/02/2005	EXAMINER	
WEINGARTEN, SCHURGIN, GAGNEBIN & LEOVICI LLP TEN POST OFFICE SQUARE BOSTON, MA 02109			LEUNG, PHILIP H	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/775,542

Applicant(s)

SECCOMBE ET AL.

Examiner

Philip H Leung

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3-27-2004</u> .   | 6) <input type="checkbox"/> Other: ____                                     |

### DETAILED ACTION

1. The drawings filed 3-17-2004 are acceptable.
2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being obvious over Rokhvarger (US 5,911,941) or Brennan (US 6,344,634) in view of Orbeck (US 5,795,146).

Rokhvarger shows a system for sintering ceramics including a furnace having a furnace chamber, a support assembly, a microwave heating source and a convection/radiation heating source for heating the ceramic materials (see Figures 1-5, col. 4, line 62 - col. 5, line 19 and col. 7, line 1 - col. 13, line 17). Brennan also shows a system for sintering ceramics including a furnace having a furnace chamber 10, a support assembly, a microwave heating source 16 with a controller 18 and a convection/radiation heating source with a controller 20 for heating the

Art Unit: 3742

ceramic materials (see Figures 1-3 and col. 3, line 55 - col. 7, line 55). Therefore it can be seen that Rokhvarger or Brennan shows every feature as claimed except for the additional use of one or more eductors each having an outlet located in the furnace chamber to provide circulation of gas within the chamber. Orbeck shows a furnace for sintering ceramics or processing a ceramic material to remove binders including a furnace having a chamber, a heating source and one or more eductors 10 to provide or supplement the circulation of the atmosphere within the furnace chamber (see Figures 1-4 and col. 1, line 42 - col. 3, line 48). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Rokhvarger or Brennan to use one or more eductors to provide or supplement the circulation of the atmosphere within the furnace chamber in order to eliminate any stagnation areas within the chamber for a more uniform temperature environment throughout the furnace chamber for better sintering result, in view of the teaching of Orbeck at col. 1, lines 42-56. In regard to claims 3, 4, 21 and 22, Rokhvarger shows the use of microwave sources with different frequencies (see col. 4, line 62 - col. 5, line 19 and col. 13, lines 1-3). In regard to claim 19, the removal of binders (binder burnout) in processing ceramic materials is well known, for examples, see Rokhvarger, col. 19, lines 4-17 and Orbeck, col. 1, lines 11-15. The control system of Rokhvarger or Brennan are controlled in all stages of the thermal process (see Figure 1 of Rokhvarger and Figure 1 of Brennan).

4. The prior art made of record below is considered pertinent to applicant's disclosure:

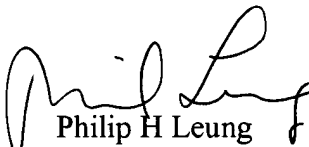
Gedevanishvilli et al (US 6,512,216) and Bowden (GB 2 262 333) are further cited to show microwave furnaces for processing ceramic materials with similar claimed features.

Art Unit: 3742

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (571) 272-4782. The examiner can normally be reached on flexible.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Philip H Leung  
Primary Examiner  
Art Unit 3742

P.Leung/pl  
1/19/2005